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Ref: 10 CFR 50.55(a)(3)

CPSES-200203399
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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
RELIEF REQUEST A-2 FOR UNIT 1 AND A-9 FOR UNIT 2 RELIEF FROM 10 CFR 50.55a REQUIREMENTS FOR CLASS 1

REF: 1) Westinghouse Nuclear Safety Advisory Letter-NSAL-00-006, Pressurizer Upper Level Instrument Safety Classification dated May 2, 2000

Gentlemen:

TXU Generation Company LP (hereafter TXU Energy) requests a relief from certain requirements applicable to reactor coolant pressure boundary Code classification performed in accordance with Title 10 CFR 50.55a(c)(1) for Comanche Peak Steam Electric Station (CPSES) Units 1 and 2. Specifically, TXU Energy seeks this relief from the requirements of 10 CFR 50.55a (c) in accordance with 10CFR50.55a(a)(3). On May 2, 2000, a Westinghouse Nuclear Safety Advisory Letter (NSAL-00-006) identified an issue regarding the pressurizer upper level instrument line safety classification. The NSAL states that a break in the instrument line for the upper (steam side) portion of the upper pressurizer level instrument may result in a rapid

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depressurization of the Reactor Coolant System (RCS) sufficient to cause an Emergency Core Cooling System (ECCS) actuation. This condition is inconsistent with the existing classification of the line as Safety Class 2. Specifically, a break in an instrument line connected to the pressurizer that results in an ECCS actuation should be classified as Safety Class 1 in accordance with ANSI N18.2 and 10 CFR 50.55a (c).

The basis supporting the request for relief is provided in the attachment to this letter. This communication contains no new licensing basis commitments regarding CPSES. If you have any questions regarding this request, please contact Obaid Bhatty at (254) 897-5839 or Douglas W. Snow at (254) 897-8448.

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC,
Its General Partner

C. L. Terry
Senior Vice President and Principal Nuclear Officer

By: Roger D. Walker
Roger D. Walker
Regulatory Affairs Manager

OAB/dws
Attachment

c - E. W. Merschoff, Region IV
W. D. Johnson, Region IV
D. H. Jaffe, NRR
Resident Inspectors, CPSES

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

I. System/Component for Which Relief is Requested:

TXU Energy requests piping classification relief for certain piping and instrument systems. The requested relief in the Reactor Coolant System, the Chemical and Volume Control System and the Process Sampling System (PS) from 10 CFR 50.55a (c) is for valves, instrument lines and other piping connected to the pressurizer above the normal water level. These lines and piping are shown on Flow Diagrams M1-0251 and M2-0251 (CPSES FSAR Figure 5.1-1) for the Reactor Coolant System (RCS), on the M1-0253-A and M2-0255 (CPSES FSAR Figure 9.3-10 for the Chemical and Volume Control System (CVCS) and on M1-0228 and M2-0228 (CPSES FSAR Figure 9.3-4) for the Primary Sampling System (PS). These piping and instrument components are described herein.

The affected lines for both units include 1) over 500 feet of small bore piping and more than 130 piping supports, 2) over 900 feet of instrument tubing and more than 300 tubing supports, and 3) more than 70 valves.

Instrument lines include the piping from the Pressurizer upper tap to the root valve and tubing downstream to the instruments and boundary valves. [RCS drawing location B-5]

Piping lines include the Pressurizer Safety Valve loop seal drain lines up to the boundary valve. Failure of these lines would have the same effect as instrument lines. [RCS drawing location A-2, B-2, C-2]

Piping lines includes the piping from the tap in the pressurizer relief line 6-RC-1-108-2501R-1 to the boundary valves in the pressurizer high point vent line [RCS drawing location A-4, B-4]. It also includes the branch from this line to the Process Sampling System shown on drawings M1-0228 and M2-0228 (FSAR Figure 9.3-4) at locations A-2 and B-2. This branch line extends to and includes the containment isolation valves for the Pressurizer Steam Space sample line. Failure of these lines would have the same effect as a failure of the instrument lines.

Piping lines include the drains on the Auxiliary Spray line which have a ⅜ inch I.D. flow restrictor [RCS drawing location E-5 and CVCS drawing location B-6 for Unit 1 and F-4 for Unit 2].

Piping lines also include the bypass lines around the pressurizer spray valves, which have a ⅜ inch I.D. flow restrictor in each connection upstream and downstream of the spray valves [RCS drawing location D-5, D-6]. Failure of these lines would have a similar effect as a failure of the instrument lines. A break in these lines would result in loss of water upstream of the spray valves and loss of steam downstream. Westinghouse has performed calculations that show the combined mass loss would still meet the original design criteria.

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

I. System/Component for Which Relief is Requested (cont):

The valves, lines and instruments discussed above are tabulated below:

Unit 1 RCS DWG M1-0251:			
DWG. Location	**Line(s)**	**Root Valve**	**Instrument(s) & Boundary Valves**
B-5	¾-2501R-2 (piping) ½-2505-2 (tubing) Condensing Pot	1RC-8053A	1-PT-0455 1-PT-0455F 1-LT-0459 1-LT-0459F 1RC-0037 1RC-0038
B-5	¾-2501R-2 ½-2505-2 Condensing Pot	1RC-8053B	1-PT-0456 1-PT-0458 1-LT-0460 1RC-0039 1RC-0040
B-5	¾-2501R-2 ½-2505-2 Condensing Pot	1RC-8053C	1-PT-0457 1-LT-0461 1-LT-0462 1RC-0042 1RC-0043
A-2	¾-RC-1-102-2501R-2	1RC-8064A	N/A
B-2	¾-RC-1-104-2501R-2	1RC-8064B	N/A
C-2	¾-RC-1-106-2501R-2	1RC-8064C	N/A
A-4	¾-RC-1-109-2501R-2 1-RC-1-901-2501R-2 ¾-2501R-2 ¾-RC-1-931-2501R-2 ¾-PS-1-001-2501R-2 (continued on M1-0228)	1RC-8095 - - 1RC-8078	1RC-8098 1-HV-3609 1-HV-3610
D-5	¾-RC-1-143-2501R-2 ¾-RC-1-133-2501R-2	1RC-8052	N/A
D-6	¾-RC-1-144-2501R-2 ¾-RC-1-134-2501R-2	1RC-8051	N/A
E-5	¾-2501R-2	1RC-0023	N/A

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

I. **System/Component for Which Relief is Requested (cont):**

Unit 1 PSS DWG M1-0228:			
DWG. Location	**Line(s)**	**Root Valve**	**Instrument(s) & Boundary Valves**
A-2 B-2 C-2	¾-PS-1-001-2501R-2 ¾-2501R-2 ¾-PS-1-030-2501R-2 ⅜-PS-1-921-2501R-2	1PS-0004	1PS-0015 1-HV-4165 1-HV-4176 1PS-0031 1PS-0502
Unit 1 CVCS DWG M1-0253-A:			
B-6	¾-2501R-2	1RC-0038	N/A

Unit 2 RCS DWG M2-0251:			
B-5	¾-2501R-2 ½-2505-2 CP2-RCCNPR-01	2RC-8053A	2-PT-0455 2-PT-0455F 2-LT-0459 2-LT-0459F 2RC-0037 2RC-0038
B-5	¾-2501R-2 ½-2505-2 CP2-RCCNPR-02	2RC-8053B	2-PT-0456 2-PT-0458 2-LT-0460 2RC-0039 2RC-0040 2RC-0041
B-5	¾-2501R-2 ½-2505-2 CP2-RCCNPR-03	2RC-8053C	2-PT-0457 2-LT-0461 2-LT-0462 2RC-0042 2RC-0043
A-2	¾-RC-2-102-2501R-2	2RC-8064A	N/A
B-2	¾-RC-2-104-2501R-2	2RC-8064B	N/A
C-2	¾-RC-2-106-2501R-2	2RC-8064C	N/A
A-4	¾-RC-2-109-2501R-2 1-RC-2-906-2501R-2 ¾-2501R-2 ¾-RC-2-905-2501R-2 (continued on M2-0228)	2RC-8095 - - 2RC-8078	2RC-8098 1-HV-3609 1-HV-3610

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

I. System/Component for Which Relief is Requested (cont):

Unit 2 PSS DWG M2-0251:			
DWG. Location	**Line(s)**	**Root Valve**	**Instrument(s) & Boundary Valves**
D-5	¾-RC-2-143-2501R-2 ¾-RC-2-133-2501R-2	2RC-8052	N/A
D-6	¾-RC-2-144-2501R-2 ¾-RC-2-134-2501R-2	2RC-8051	N/A
E-5	¾-2501R-2	2RC-0023	N/A

Unit 2 PSS DWG M2-0228:			
A-2 B-2 C-2	¾-PS-2-001-2501R-2 ¾-2501R-2 ¾-PS-2-030-2501R-2 ⅜-PS-2-922-2501R-2	2PS-0004	2PS-0015 2-HV-4165 2-HV-4176 2PS-0511 2PS-0502

Unit 2 CVCS DWG M2-0255:			
F-4	¾-2501R-2	2RC-0038	N/A

II. Code Requirement from Which Relief is Requested:

10CFR50.55a (c) states in part:

(c) Reactor coolant pressure boundary.

(1) Components which are part of the reactor coolant pressure boundary must meet the requirements for Class 1 components in Section III (4)(5) of the ASME Boiler and Pressure Vessel Code, except as provided in paragraphs (c)(2), (c)(3), and (c)(4) of this section.

(2) Components which are connected to the reactor coolant system and are part of the reactor coolant pressure boundary as defined in §50.2 need not meet the requirements of paragraph (c)(1) of this section, provided:

(i) In the event of postulated failure of the component during normal reactor operation, the reactor can be shut down and cooled down in an orderly manner, assuming makeup is provided by the reactor coolant makeup system.

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

II. Code Requirement from Which Relief is Requested (cont):

Westinghouse Nuclear Safety Advisory Letter "NSAL-00-006: Pressurizer Upper Level Instrument Safety Classification" was issued May 2, 2000. This letter identified an issue where a break in the instrument line for the upper (steam side) portion of the upper pressurizer level instrument may result in a rapid depressurization of the RCS sufficient to cause an ECCS actuation. This condition is inconsistent with the existing classification of the line as Safety Class 2. Specifically, a break in an instrument line connected to the pressurizer that results in an ECCS actuation should be classified as Safety Class 1 in accordance with ANSI N18.2 and 10CFR 50.55a (c).

The NSAL was based on the historical interpretation that an Engineered Safety Features Actuation Signal (ESFAS) caused by the postulated failure of the subject lines would not constitute shutdown and cooldown "in an orderly manner". This conservative simplification of the criteria in regulations was the historical interpretation of 10CFR50.55a and ANSI N18.2-1973 by Westinghouse at the time of original design and licensing. It should be noted that ANSI N51.1-1983, Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants, defines the term "*Orderly Shutdown and Cooldown*" as *"A shutdown and cooldown in which the fuel and reactor coolant pressure boundary conditions are within technical specification operational limits. Automatic actuation of an engineered safety feature may be required."* ANSI N51.1 definition of Class 1 does not include the lines subject to the NSAL. This newer interpretation does not hinge on whether or not an ESFAS occurs but rather on the integrity of the Reactor Coolant Pressure Boundary (RCPB). For this issue, the event is a failure of the RCPB, which includes all the lines subject to the NSAL. ANSI N51.1 classifies minor RCS leakage, which does not prevent orderly reactor shutdown as a Plant Condition 2 (PC-2). This condition would apply to a RCPB water space line where a ⅜ inch flow restrictor was used. RCS leakage that would not prevent a "controlled shutdown" is classified as Plant Condition 3 (PC-3) and a small break LOCA is classified as PC-4. "Controlled Shutdown and Cooldown" is defined as *"A shutdown and cooldown in which the fuel and reactor coolant pressure boundary conditions may exceed technical specification limits and implementation of plant emergency procedures may be required"*. It appears that the intent of ANSI N51.1 would be to classify a full break in these lines as PC-3. The sequence of events for a break in a line connected to the steam space would be for the pressurizer water volume to increase due to swell and the ECCS actuation until the level reaches the break. The mass loss would increase past the point of the PC-3 event and would become a PC-4 (SBLOCA) as a direct consequence. In the process, TS LCO 3.4.9 operation limits for pressurizer volume </= 92 % would be violated. One of the basic requirements for an event to be classified as a given Condition is that they can be terminated before they evolve into a higher condition event. The ANSI 51.1 PC-4 is equivalent to ANSI N18.2 Condition III. Therefore, since a break in the subject lines could result in a SBLOCA, the CPSES classification would conservatively be a Condition III event.

After review of the NSAL, ANSI N18.2, ANSI N51.1, and the regulatory requirements, TXU Energy concurred with the identified issue (NASL-00-006 and its applicability to CPSES, and that this issue is "literal compliance with 10CFR50.55a"). The review also concluded that the scope applies to all Class 2 lines connected to the pressurizer steam space.

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

II. Code Requirement from Which Relief is Requested (cont):

This condition is the result of a change in Westinghouse design. In earlier Westinghouse designs, ECCS actuation would only occur with coincident low pressurizer level and low pressurizer pressure. The effect of this change was not addressed when Westinghouse made the change in the reactor protection system.

III. Basis for Hardship or Unusual Difficulty without Compensating Increase in Level of Quality or Safety:

The piping and valves at Comanche Peak were designed and constructed using the rules of the ASME Boiler and Pressure Vessel Code, Section III, Class 2.

Upgrading the affected piping and valves to ASME Boiler and Pressure Vessel Code, Section III, Class 1 would be a hardship or unusual difficulty because the scope of the change would require substantial time and resources to upgrade both documentation and tubing supports. Upgrading of documentation for tubing and piping would provide no safety benefit. The estimated time for the potential removal and re-installation of support materials for over 300 tubing supports would be approximately 15,000 hours; and, this time estimate does not include engineering man-hours nor does it consider the additional radiation exposure that would be experienced during this process. The estimated engineering man-hours for upgrading documentation and supports are approximately 4000 man-hours. The material cost would be associated with replacing ASTM materials with ASME materials. Because of the location of the supports, the work could only be done during outages. Therefore, upgrading of tubing supports would be very costly in time and materials and would not result in a compensating increase in the level of quality or safety.

IV. Basis for Relief:

The piping and valves listed in Section I were designed and constructed using the rules of the ASME Boiler and Pressure Vessel Code, Section III, Class 2. The instrumentation tubing and valves connected to this piping were designed using the rules of the ASME B&PV Code, Section III, Class 2. The design and construction of the instruments themselves are excluded from the ASME Code rules. The proposed alternative is to allow these lines and valves to remain as designed and constructed.

For instrumentation lines, as specified in ASME III, Article NA-1130(c), the code does not apply to the instruments themselves. The code does apply to the design and materials of all tubing, valves and fittings up to and including the last fitting for the instrument. The tubing and flexhoses at CPSES were purchased to ASME Class 2 requirements for the lines affected. The Safety Class 2 tubing at CPSES is not N-stamped. The supports for the tubing are designated Seismic Category I, and are not ASME III, NF code supports.

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

IV. Basis for Relief (cont):

A review of the piping and tubing installed at CPSES is summarized below:

	Valves	Piping	Tubing/ Flexhoses	Pipe Supports	Tubing Supports
Design	Note 1	Note 1	Note 1	Note 1	Note 2,3
Material	Note 1	Note 1	Note 1	Note 1	Note 2,3
Fabrication	Note 1	Note 1	Note 2	Note 1	Note 2,3
Installation Summary	Note 1	Note 1	Note 2	Note 1	Note 2,3

Note 1: Class 2 requirements are either identical to Class 1, or Class 2 rules are permitted to be used by ASME III NB-3630(d)(2).

Note 2: The tubing is addressed in the CPSES FSAR Table 17A-1 as follows:

The ASME III Code (excluding NA-4000, NA-5000, and NA-8000) shall apply to all tubing, valves and fittings. Tubing, valves and fittings are procured as ASME material but will not be installed with Third Party Inspection, Code Stamping, and Code Data Reports as specified in ASME Subsection NA-5000 and NA-8000. Site fabrication and installation of tubing, valves and fittings will be in accordance with an NRC approved QA program governing non-ASME work which meets the requirements of Appendix B to 10 CFR part 50 (excluding ASME III Subsection NA-4000). Piping installed between root valves and instruments is subject to the same requirements as stated previously in this note for instrument tubing, valves and fittings. Tubing and valve supports shall be installed as Seismic Category I, but shall not comply with ASME III Subsection NF requirements. See Section FSAR 3.9B.3.4.3 for details.

Note 3:FSAR 3.9B.3.4.3 Instrument Impulse Tubing Supports for ASME III Class 2 and Class 3 Safety Related Applications

a. All instrument impulse tubing, valves and fittings connecting instruments to ASME III Class 2 and Class 3 piping root valves will be seismically supported.
b. All instrument impulse tubing, valves and fittings connecting nuclear safety related instruments to Non-ASME piping or ducting in seismic category I structures will be seismically supported.
c. The support design will consider gravity, seismic and thermal loading combinations and will be consistent with the design requirements of AISC.
d. Any welding of the support system will be per AWS specifications consistent with that performed on other nuclear safety related, Non-ASME supports.

TXU Energy
Comanche Peak Steam Electric Station Units 1 and 2
Request for Relief No. A-2 for Unit 1 and A-9 for Unit 2

IV. Basis for Relief (cont):

e. Subsection NF supports will be employed on the ASME III main line piping including the instrument root valve.

f. The material used for fabrication of the tubing supports will be purchased with certificates of compliance to applicable ASTM standards

g. The seismically designed support systems such as cable tray supports, pipe supports, or conduit supports may be used for tubing if paragraph c above is met. Any necessary re-analysis will be performed to justify the additional loads.

h. AISC, "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" Nov. 1, 1978 including Supplement 1 March 11, 1986 may be utilized in the analysis of structural tubing.

i. The tubing stress analysis will conform to the loading combinations and stress limits of ASME Section III class 2 and 3 equations 8 through 11.

Based on the aforementioned, upgrading the affected piping and valves to ASME Boiler and Pressure Vessel Code, Section III, Class 1 would be a hardship or unusual difficulty because the scope of the change would require substantial time and resources to upgrade both documentation and tubing supports. TXU Energy believes that upgrading of documentation for tubing and piping would provide no safety benefit. Additionally, upgrading of tubing supports would be costly in time and materials and would not result in a compensating increase in the level quality or safety.

Granting of this relief (continuing to operate with the current design) would not adversely impact the health and safety of the public.

V. Duration of Proposed Relief Request:

TXU requests this relief for the life of the plant. No undue risk to the public health and safety is presented by this request.

VI. References:

1) Westinghouse Nuclear Safety Advisory Letter (NSAL-00-006) Pressurizer Upper Level Instrument Safety Classification [WPT-16101 dated May 2, 2000]

2) Westinghouse Nuclear Safety Advisory Letter (NSAL-95-010) Pressurizer Upper Level Instrument Tap Nozzle Cracks dated November 30, 1995.

3) Comanche Peak Steam Electric Station Specification CPSES-I-1018 "Installation of Piping/Tubing and Instrumentation".